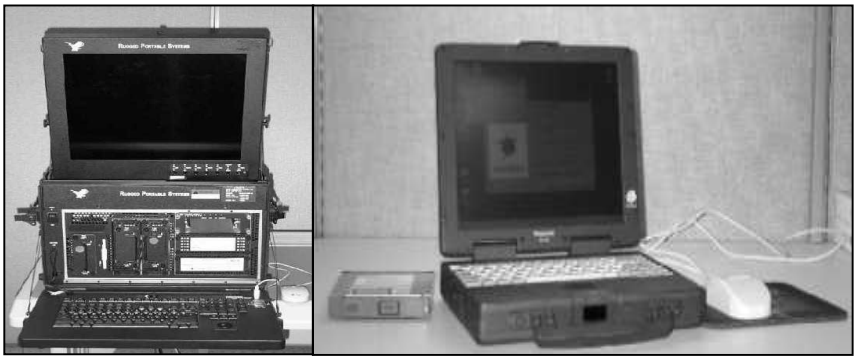
AIR FORCE MISSION SUPPORT SYSTEM (AFMSS)



MPS III PFPS

The Air Force Mission Support System (AFMSS) is a family of hardware and software products designed to provide automated mission planning support for Air Force aircraft and precision-guided munitions (PGMs).

AFMSS planning systems use several configurations comprised of commercial off-the-shelf (COTS) hardware to meet system requirements. Two basic configurations exist: the Mission Planning System (MPS), which is UNIX-based and runs on UNIX workstations and the Portable Flight Planning Software (PFPS), which is Microsoft Windows-based and runs on IBM-compatible PCs. Upgrades for AFMSS are developed in an evolutionary or spiral development process.

Used in conjunction with AFMSS, mission-planning environments (MPEs), consisting of Aircraft/Weapon/Electronics (A/W/E) modules and other Installable Software Modules (ISMs), produce aircraft-specific combat mission folders, consisting of maps, images, and flight information forms. Additionally, aircraft with electronic data transfer capability can employ aircraft-unique hardware peripherals with AFMSS to prepare data transfer devices (DTDs) for uploading mission information into aircraft computers.

There are currently four Mission Planning System (MPS) hardware configurations. Eventually, all Air Force AFMSS users and Navy platforms using legacy mission planners will migrate to the Joint Mission Planning System (JMPS) architecture. JMPS is described in a separate report in this document.

BACKGROUND INFORMATION

In earlier years, the UNIX-based AFMSS was a problematic, trouble-plagued program. While some versions worked acceptably (albeit with many workarounds), the more demanding UNIX-based versions were not operationally effective or suitable, particularly in earlier versions. Recent AFMSS versions (both UNIX and PFPS) have improved considerably. All Air Force users are now able to meet operational commitments using AFMSS planning systems.

Current activity in the AFMSS program is directed toward development, testing, and fielding of planned, periodic software releases. The goals of these releases are to correct deficiencies remaining from earlier versions and to add functionality, consistent with user requirements and upgrades to aircraft operational flight programs.

TEST & EVALUATION ACTIVITY

Table 1 below summarizes AFMSS operational test activity performed during FY01.

Table 1. Summary of Recent AFMSS OT&E Activity

Operational Test Organization	MPS Versions Tested	PFPS Versions Tested
28th Test Squadron, Air Warfare Center (AWFC), Eglin AFB, Florida	F-15 Multi-Stage Improvement Program (MSIP), F-15E Suite 3.1 with EGBU-15, F-15E Suite 4.0, F-16 PO6 (40T6/50T5)	PFPS 3.1.2 (basic), F-16 Software Capabilities Upgrade (SCU) 4/4.1, F-16 PO6 (40T6/50T5) Cartridge Support Software (CSS), E-3A
Detachment 1, 53rd Test and Evaluation Group (TEG), Holloman AFB, New Mexico	F-117A	
9th Wing, Beale AFB, California	U-2	
18th Flight Test Squadron, Air Force Special Operations Command (AFSOC), Hurlburt Field, Florida		PFPS 3.1.1 (basic), C-130 (various designations)
33rd Flight Test Squadron, Air Mobility Warfare Center (AMWC), Fort Dix, New Jersey		C17, C-5, KC-10, KC-135

Operational tests of planning systems utilize mission planning scenarios characteristic of squadron or wing level peacetime and combat missions. Missions were planned under realistic conditions and time constraints while test team members tracked failure data, evaluated software maturity, and recorded the time required to prepare mission planning products.

TEST & EVALUATION ASSESSMENT

The AFMSS family of systems has matured over the past few years to provide effective mission planning tools for Air Force aircraft. All AFMSS planning systems that underwent operational testing in FY01 received overall satisfactory ratings, except for the F-117A version 6.0, which received a marginally satisfactory rating because of software and hardware reliability problems discovered during testing. Several users still have some functional areas that are rated as unsatisfactory or marginally satisfactory, but overall speed improvements of the hardware makes these problems bearable for the user. Although many deficiencies remain uncorrected, most of the outstanding deficiencies are considered minor and of low priority.

Although funding to migrate platforms currently on MPS and PFPS systems to JMPS has been budgeted, the current legacy systems must continue to be maintained and updated for the foreseeable future through at least FY09. Platform migration is schedule to begin in FY 04 and be complete in FY09. This will mandate continued operational tests to ensure evolving versions continue to meet requirements.